

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-290-9  
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

DETROIT DIESEL CORPORATION

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following Detroit Diesel Corporation 1991 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

<u>Engine Family</u>	<u>Displacement Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems &amp; Special Features</u>
MDD11.1FZA2	11.1 (677)	Turbocharger Charge Air Cooler Powertrain Control Module

Engine models and codes are listed on attachments.

The following are the certification emission standards for this engine family:

<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>	<u>Particulates gm/bhp-hr</u>
1.3	15.5	5.0	0.25

The following are the certification emission values for this engine family:

<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>	<u>Particulates gm/bhp-hr</u>
MDD11.1FZA2	0.1	2.4	4.9	0.19

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Health and Safety Code Section 43205.5).

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Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 12<sup>th</sup> day of December, 1990.

A handwritten signature in cursive script, appearing to read "R. B. Summerfield", is written over the typed name and title.

R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

Executive Order No.: A-290-9

1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINES

Manufacturer: Detroit Diesel Corporation

Engine Family: MDD11.1FZA2

Liter (CID): 11.1 (677)

Engine Type: I-6

Emission Control System and Special Features : PCME,CAC, TC

ENGINE MODEL	FUEL INJECTION PUMP MFR PART NO.	ENGINE CODE INJECTOR MFR PART NO.	MAXIMUM RATED HP AT RPM	FUEL RATE mm <sup>3</sup> /STROKE (LBS/HR)	PART. TRAP/ CATALYST MFR. P/N
11.1L	NA	1C (1) 5234935	350@1800	183.6 (109.9)	
		2C (1) 5234935	340@1650	194.6 (106.8)	
	NA	3C (1) 5234935	320@2100	148.9 (104.0)	
		4C (1) 5234935	320@2100	148.9 (104.0)	
	NA	5C (1) 5234935	320@1950	156.5 (101.5)	
		6C (1) 5234835	320@1800	166.7 (99.8)	
	NA	7C (1) 5234935	320@1800	166.7 (99.8)	
		8C (1) 5234935	300@1800	156.4 (93.6)	

Engine Family Continued on Page 1B

(1) Diesel Technology Corporation

ISSUED: 11-01-90

REV. NO.:

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ENGINE FAMILY MDD11.1FZA2 - CONTINUED

11.1L	NA	9C (1) 5234935	285@1800	133.9 (93.5)	
	NA	10C (1) 5234935	285@1800	149.0 (89.2)	
	NA	11C (1) 5234935	275@1800	143.3 (85.8)	

(1) Diesel Technology Corporation

ISSUED: 11-01-90

REV. NO.: